

Alternatives: 2 **Treatment:** Shelterwood; Site prep; Barren restoration; Broadcast burn

Compartment: 338 District: Cadillac-Manistee

Stand: 20 Location: T20N, R16W, Sec 1; Mason County

Acreage Treated: 50 ELTP: 10

Unit Description: A jack pine-oak stand with a year of origin of 1890 and a basal area (BA) of 90. It is located on

LTA 1 in Management Area 4.2.

Resource Prescription (<u>not</u> southeast 10 ac): Shelterwood removal cut harvest; remove decadent/high risk jack pine and oak <8" dbh. Site prep for natural regeneration by hand tool felling of all jack pine and oak <5" dbh. Retain a minimum of 30 BA of oak and pine >8" dbh. Retain or create an average of 9 suitable roost trees per acre within the treated area based upon the priorities in the Indiana Bat Management Guidelines (Forest Plan Standards and Guidelines, pages II 23-25). Retain native, mast producing shrubs where possible.

Resource Prescription (southeast 10 ac): Thin to 20-30 BA; retain all oak with a dbh >8"; reduce conifer activity fuel by 95%; allow tree length skidding and complete topwood utilization. Retain or create an average of 9 suitable roost trees per acre within the treated area based upon the priorities in the Indiana Bat Management Guidelines (Forest Plan Standards and Guidelines, pages II 23-25). Retain native, mast producing shrubs where possible.

The southeast 10 acres of the stand would be moved from a land suitability classification (LSC) 500 to an LSC 600, removing these acres from the Forests' timber base.

Fuels Prescription: A broadcast burn would be conducted on the southeast 10 acres. The prescribed burn would take place after a burn plan is written and approved for the units to be treated. Details of desired weather conditions, firefighting forces required, safety concerns, and other critical issues would be detailed in the burn plan. The objectives are to reduce fuel loading, reduce ladder fuels and to maintain a more open condition to reduce the possibility of catastrophic wildfire. The prescribed burn should reduce 1 hour fuels 75% (10-90%), 10 hour fuels 50% (5-80% range), 100 hour fuels 35% (10-70% range), and 1000 hour fuels 10% (0-40% range). Exposed mineral soil would occur on no more that 15% of the stand. Over all tree mortality in the residual stand should not exceed 15%. Manage smoke to minimize impacts to smoke sensitive areas.

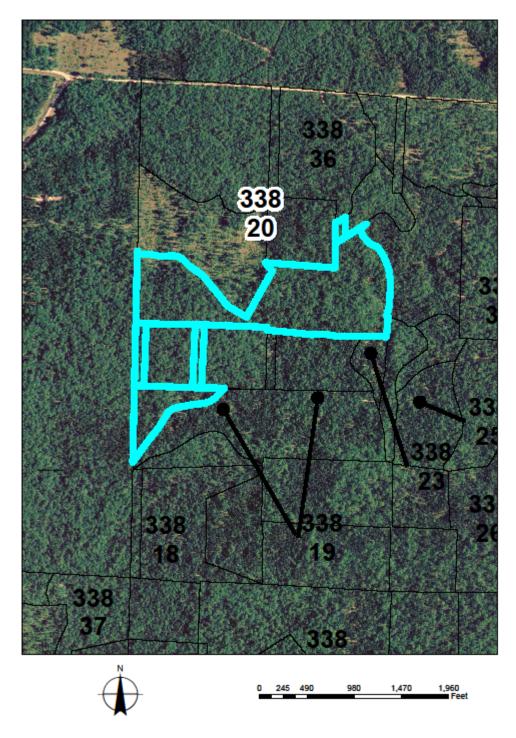
A series of maintenance burns may be required to reduce additional fuel buildup; encourage continued growth and sustain plant species dependent on fire; and, discourage regeneration of tree species associated with extreme fire behavior. It is anticipated that up to two additional burns spaced every 3-5 years may be required to achieve these goals.

Concern: Protection of potential Indiana bats present during the breeding season and potential roosting habitat. **Mitigation:** Prescribed burning would be prohibited from May 1-August 31 to eliminate the possibility of impacting individual bats in summer roosts. Prescribed burns would be conducted only when smoke would be transported away from the Tippy Management Zone (TMZ) or when the majority of the smoke would disperse before reaching the TMZ to protect bats during spring and fall swarming.

Mitigation: Standing snags ≥6 inches dbh would not be cut and/or removed unless considered a safety hazard. **Mitigation:** Cutting would be prohibited from May 1-August 31 to eliminate the possibility of impacting individual bats in summer roosts.

Concern: Protection of bald eagle nesting areas.

Mitigation: Prescribed burning would be conducted only when smoke would be transported away from active nesting areas. See district wildlife biologist for current nest area locations and status.



Alternatives: 3 **Treatment:** Shelterwood; Site prep; Barren restoration; Broadcast

burn; Fuelbreak; Pile and burn

Compartment: 338 **District:** Cadillac-Manistee

Stand: 20 Location: T20N, R16W, Sec 1; Mason County

Acreage Treated: 49 ELTP: 10

Unit Description: A jack pine-oak stand with a year of origin of 1890 and a basal area (BA) of 90. It is located on

LTA 1 in Management Area 4.2.

Resource Prescription (north 40 ac): Shelterwood removal cut harvest; remove decadent/high risk jack pine and oak <8" dbh. Site prep for natural regeneration by hand tool felling of all jack pine and oak <5" dbh. Retain a minimum of 30 BA of oak and pine >8" dbh. Retain or create an average of 9 suitable roost trees per acre within the treated area based upon the priorities in the Indiana Bat Management Guidelines (Forest Plan Standards and Guidelines, pages II 23-25). Retain native, mast producing shrubs where possible.

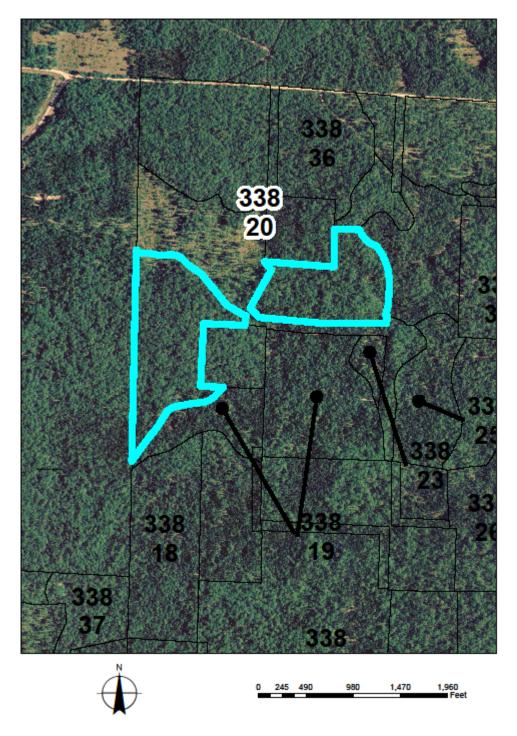
Resource Prescription (south 5 ac): Thin to 20-30 BA; retain all oak with a dbh >8"; reduce conifer activity fuel by 95%; allow tree length skidding and complete topwood utilization. Retain or create an average of 9 suitable roost trees per acre within the treated area based upon the priorities in the Indiana Bat Management Guidelines (Forest Plan Standards and Guidelines, pages II 23-25). Retain native, mast producing shrubs where possible.

The south 5 acres of this stand would be moved from a land suitability classification (LSC) 500 to an LSC 600, removing the stand from the Forests' timber base.

Fuels Prescription: Cut all decadent hardwoods and all conifers within 100' of private property, road outside the areas to be shelterwood harvested and restored to barrens (4 ac). Break up all fuel concentrations that appear to pose a threat. These fuels would then be piled within the fuelbreak corridor. Piles can vary in size and should not be placed under overstory trees. All healthy hardwood overstory trees and hardwood regeneration would be retained. Burn the piles created during fuelbreak construction. This would take place when long range weather forecasts, usually late fall or winter, insure that fire does not spread from the piles to adjacent land.

A broadcast burn would be conducted on the south 5 acres. The prescribed burn would take place after a burn plan is written and approved for the units to be treated. Details of desired weather conditions, firefighting forces required, safety concerns, and other critical issues would be detailed in the burn plan. The objectives are to reduce fuel loading, reduce ladder fuels and to maintain a more open condition to reduce the possibility of catastrophic wildfire. The prescribed burn should reduce 1 hour fuels 75% (10-90%), 10 hour fuels 50% (5-80% range), 100 hour fuels 35% (10-70% range), and 1000 hour fuels 10% (0-40% range). Exposed mineral soil would occur on no more that 15% of the stand. Over all tree mortality in the residual stand should not exceed 15%. Manage smoke to minimize impacts to smoke sensitive areas.

A series of maintenance burns may be required to reduce additional fuel buildup; encourage continued growth and sustain plant species dependent on fire; and, discourage regeneration of tree species associated with extreme fire behavior. It is anticipated that up to two additional burns spaced every 3-5 years may be required to achieve these goals.



Alternatives: 4 Treatment: Shelterwood; Site prep

Compartment: 338 District: Cadillac-Manistee

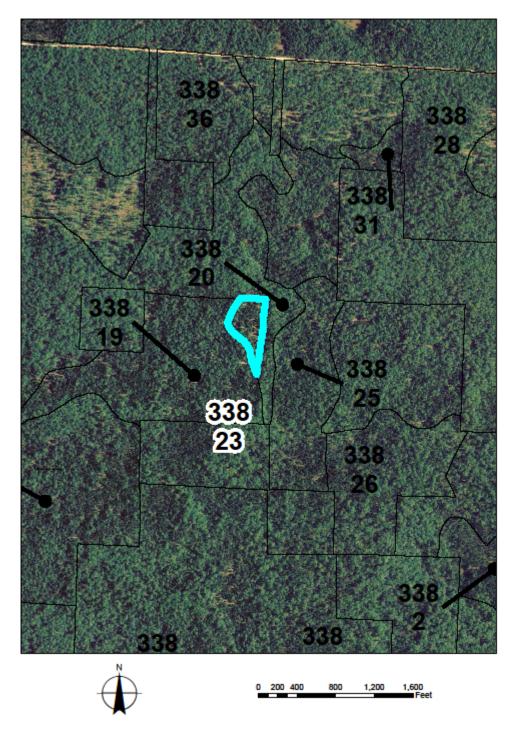
Stand: 20 Location: T20N, R16W, Sec 1; Mason County

Acreage Treated: 50 ELTP: 10

Unit Description: A jack pine-oak stand with a year of origin of 1890 and a basal area (BA) of 90. It is located on

LTA 1 in Management Area 4.2.

Resource Prescription: Shelterwood removal cut harvest; remove decadent/high risk jack pine and oak <8" dbh. Site prep for natural regeneration by hand tool felling of all jack pine and oak <5" dbh. Retain a minimum of 30 BA of oak and pine >8" dbh. Retain or create an average of 9 suitable roost trees per acre within the treated area based upon the priorities in the Indiana Bat Management Guidelines (Forest Plan Standards and Guidelines, pages II 23-25). Retain native, mast producing shrubs where possible.



Alternatives: 2, 4 **Treatment:** Opening maintenance; Broadcast burn

Compartment: 338 District: Cadillac-Manistee

Stand: 23 Location: T20N, R16W, Sec 1; Mason County

Acreage Treated: 4 ELTP: 10

Unit Description: An opening located on LTA 1 in Management Area 4.2.

Fuels Prescription: A broadcast burn would be conducted. The prescribed burn would take place after a burn plan is written and approved for the units to be treated. Details of desired weather conditions, firefighting forces required, safety concerns, and other critical issues would be detailed in the burn plan. The objectives are to maintain the opening for plant diversity, reduce fuel loading, and to maintain a more open condition to allow fire fighters access to fight possible crown fires in the area. The fire intensity needed to achieve the objectives of killing tree saplings, thatch reduction, and shrub and warm season grass/forb regeneration would be generated by flame heights of 1-2'. The controlled burn would be of low intensity and be confined to the ground cover layer. The burn would be short in duration, consuming primarily grasses and litter. The prescribed burn should reduce 1 hour fuels 80% (50-90%), 10 hour fuels 60% (30-80% range), and 100 hour fuels 5% (10-70% range). Exposed mineral soil would occur on no more that 15% of the stand. Manage smoke to minimize impacts to smoke sensitive areas.

A series of maintenance burns may be required to reduce additional fuel buildup; encourage continued growth and sustain plant species dependent on fire; and, discourage regeneration of tree species associated with extreme fire behavior. It is anticipated that up to two additional burns spaced every 3-5 years may be required to achieve these goals.

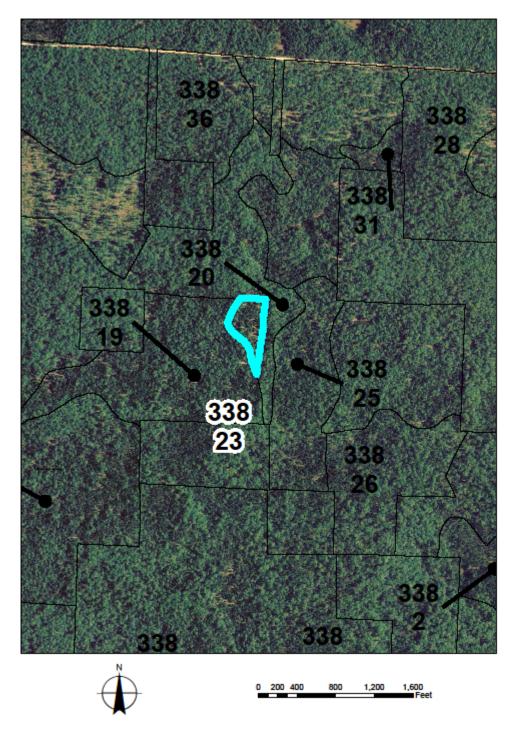
Wildlife Prescription: Cut to remove encroaching pine and hardwoods less than 6" diameter breast height where needed to maintain opening and release mast producing shrubs/trees. Girdle larger trees where needed to maintain opening and create snags. Retain or create an average of 9 suitable roost trees per acre within the treated area based upon the priorities in the Indiana Bat Management Guidelines (Forest Plan Standards and Guidelines, pages II 23-25).

Concern: Protection of potential Indiana bats present during the breeding season and potential roosting habitat. **Mitigation:** Prescribed burning would be prohibited from May 1-August 31 to eliminate the possibility of impacting individual bats in summer roosts. Prescribed burns would be conducted only when smoke would be transported away from the Tippy Management Zone (TMZ) or when the majority of the smoke would disperse before reaching the TMZ to protect bats during spring and fall swarming.

Mitigation: Standing snags ≥6 inches dbh would not be cut and/or removed unless considered a safety hazard.

Concern: Protection of bald eagle nesting areas.

Mitigation: Prescribed burning would be conducted only when smoke would be transported away from active nesting areas. See district wildlife biologist for current nest area locations and status.



Alternatives: 3 Treatment: Opening maintenance
Compartment: 338 District: Cadillac-Manistee

Stand: 23 Location: T20N, R16W, Sec 1; Mason County

Acreage Treated: 4 ELTP: 10

Unit Description: An opening located on LTA 1 in Management Area 4.2.

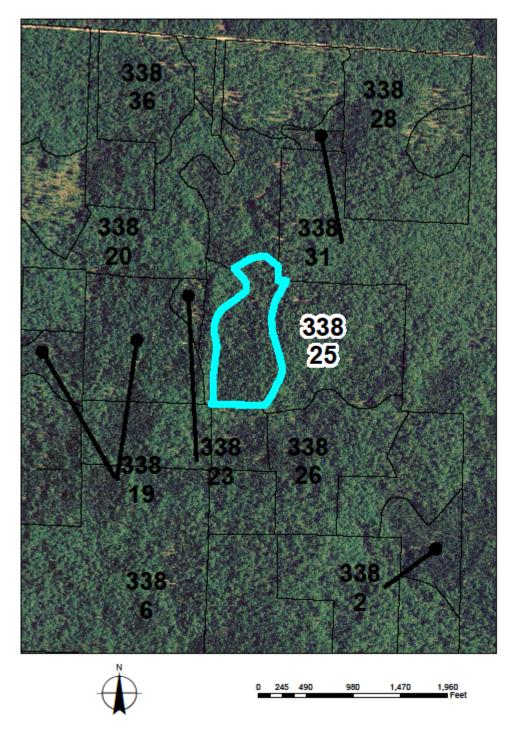
Wildlife Prescription: Cut to remove encroaching pine and hardwoods less than 6" diameter breast height where needed to maintain opening and release mast producing shrubs/trees. Girdle larger trees where needed to maintain opening and create snags. Retain or create an average of 9 suitable roost trees per acre within the treated area based upon the priorities in the Indiana Bat Management Guidelines (Forest Plan Standards and Guidelines, pages II 23-25).

Concern: Protection of potential Indiana bats present during the breeding season and potential roosting habitat. **Mitigation:** Prescribed burning would be prohibited from May 1-August 31 to eliminate the possibility of impacting individual bats in summer roosts. Prescribed burns would be conducted only when smoke would be transported away from the Tippy Management Zone (TMZ) or when the majority of the smoke would disperse before reaching the TMZ to protect bats during spring and fall swarming.

Mitigation: Standing snags ≥ 6 inches dbh would not be cut and/or removed unless considered a safety hazard.

Concern: Protection of bald eagle nesting areas.

Mitigation: Prescribed burning would be conducted only when smoke would be transported away from active nesting areas. See district wildlife biologist for current nest area locations and status.



Alternatives: 2 Treatment: Clearcut; Site prep
Compartment: 338 District: Cadillac-Manistee

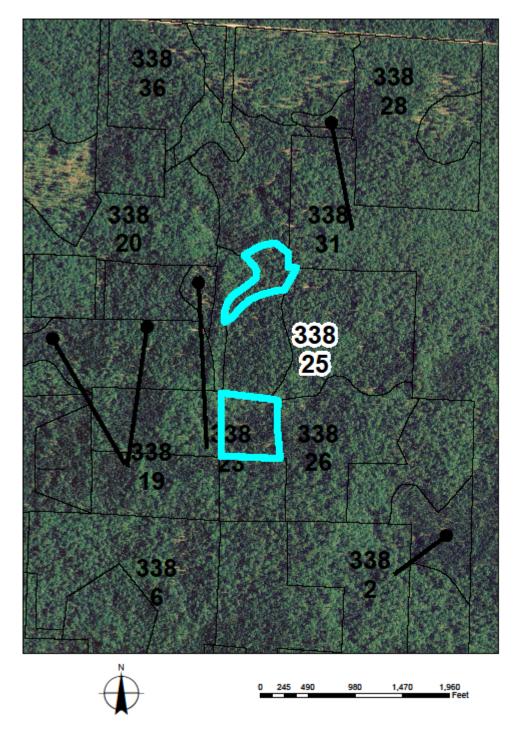
Stand: 25 Location: T20N, R16W, Sec 1; Mason County

Acreage Treated: 20 ELTP: 10

Unit Description: A jack pine stand with a year of origin of 1960 and a basal area (BA) of 80. It is located on LTA

1 in Management Area 4.2.

Resource Prescription (north 20 ac): Retain 10-20 oaks/acre >9" dbh. Site prep for natural regeneration all jack pine and oak <5" dbh. Retain or create an average of 9 suitable roost trees per acre within the treated area based upon the priorities in the Indiana Bat Management Guidelines (Forest Plan Standards and Guidelines, pages II 23-25). Retain native, mast producing shrubs where possible.



Alternatives: 3 **Treatment:** Shelterwood; Site prep; Barren restoration; Broadcast burn

Compartment: 338 District: Cadillac-Manistee

Stand: 25 Location: T20N, R16W, Sec 1; Mason County

Acreage Treated: 28 ELTP: 10

Unit Description: A jack pine stand with a year of origin of 1960 and a basal area (BA) of 80. It is located on LTA

1 in Management Area 4.2.

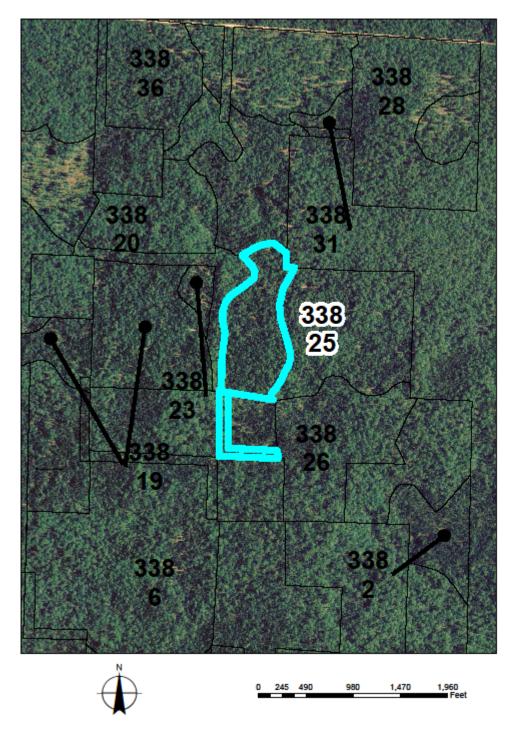
Resource Prescription (north 5 ac): Shelterwood removal cut harvest; remove decadent/high risk jack pine and oak <8" dbh. Site prep for natural regeneration by hand tool felling of all jack pine and oak <5" dbh. Retain a minimum of 30 BA of oak and pine >8" dbh. Retain or create an average of 9 suitable roost trees per acre within the treated area based upon the priorities in the Indiana Bat Management Guidelines (Forest Plan Standards and Guidelines, pages II 23-25). Retain native, mast producing shrubs where possible.

Resource Prescription (south 10 ac): Thin to 20-30 BA; retain all oak with a dbh >8"; reduce conifer activity fuel by 95%; allow tree length skidding and complete topwood utilization. Retain or create an average of 9 suitable roost trees per acre within the treated area based upon the priorities in the Indiana Bat Management Guidelines (Forest Plan Standards and Guidelines, pages II 23-25). Retain native, mast producing shrubs where possible.

The south 10 acres of this stand would be moved from a land suitability classification (LSC) 500 to an LSC 600, removing the stand from the Forests' timber base.

Fuels Prescription (south 10 ac): A broadcast burn would be conducted. The prescribed burn would take place after a burn plan is written and approved for the units to be treated. Details of desired weather conditions, firefighting forces required, safety concerns, and other critical issues would be detailed in the burn plan. The objectives are to reduce fuel loading, reduce ladder fuels and to maintain a more open condition to reduce the possibility of catastrophic wildfire. The prescribed burn should reduce 1 hour fuels 75% (10-90%), 10 hour fuels 50% (5-80% range), 100 hour fuels 35% (10-70% range), and 1000 hour fuels 10% (0-40% range). Exposed mineral soil would occur on no more that 15% of the stand. Over all tree mortality in the residual stand should not exceed 15%. Manage smoke to minimize impacts to smoke sensitive areas.

A series of maintenance burns may be required to reduce additional fuel buildup; encourage continued growth and sustain plant species dependent on fire; and, discourage regeneration of tree species associated with extreme fire behavior. It is anticipated that up to two additional burns spaced every 3-5 years may be required to achieve these goals.



Alternatives: 4 **Treatment:** Clearcut; Site prep; Fuelbreak; Pile and burn

Compartment: 338 District: Cadillac-Manistee

Stand: 25 Location: T20N, R16W, Sec 1; Mason County

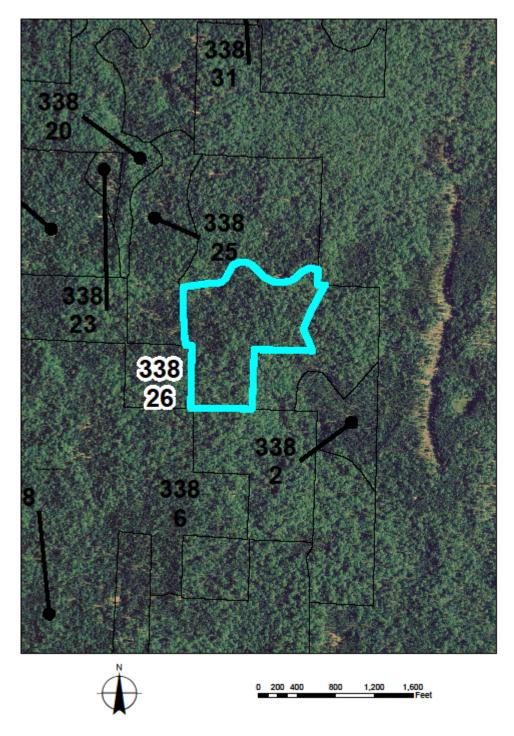
Acreage Treated: 22 ELTP: 10

Unit Description: A jack pine stand with a year of origin of 1960 and a basal area (BA) of 80. It is located on LTA

1 in Management Area 4.2.

Resource Prescription (north 20 ac): Retain 10-20 oaks/acre >9" dbh. Site prep for natural regeneration all jack pine and oak <5" dbh. Retain or create an average of 9 suitable roost trees per acre within the treated area based upon the priorities in the Indiana Bat Management Guidelines (Forest Plan Standards and Guidelines, pages II 23-25). Retain native, mast producing shrubs where possible.

Fuels Prescription (2 ac): Cut all decadent hardwoods and all conifers within 100' of property line outside the area to be clearcut harvested. Break up all fuel concentrations that appear to pose a threat. These fuels would then be piled within the fuelbreak corridor. Piles can vary in size and should not be placed under overstory trees. All healthy hardwood overstory trees and hardwood regeneration would be retained. Burn the piles created during fuelbreak construction. This would take place when long range weather forecasts, usually late fall or winter, insure that fire does not spread from the piles to adjacent land.



Alternatives: 2, 3 **Treatment:** Barren restoration; Broadcast burn

Compartment: 338 District: Cadillac-Manistee

Stand: 26 Location: T20N, R16W, Sec 1; Mason County

Acreage Treated: 32 ELTP: 10

Unit Description: A jack pine-oak stand with a year of origin of 1963 and a basal area (BA) of 90. It is located on

LTA 1 in Management Area 4.2.

Resource Prescription: Thin to 20-30 BA; retain all oak with a dbh >8"; reduce conifer activity fuel by 95%; allow tree length skidding and complete topwood utilization. Retain or create an average of 9 suitable roost trees per acre within the treated area based upon the priorities in the Indiana Bat Management Guidelines (Forest Plan Standards and Guidelines, pages II 23-25). Retain native, mast producing shrubs where possible.

This stand would be moved from a land suitability classification (LSC) 500 to an LSC 600, removing the stand from the Forests' timber base.

Fuels Prescription: A broadcast burn would be conducted. The prescribed burn would take place after a burn plan is written and approved for the units to be treated. Details of desired weather conditions, firefighting forces required, safety concerns, and other critical issues would be detailed in the burn plan. The objectives are to reduce fuel loading, reduce ladder fuels and to maintain a more open condition to reduce the possibility of catastrophic wildfire. The prescribed burn should reduce 1 hour fuels 75% (10-90%), 10 hour fuels 50% (5-80% range), 100 hour fuels 35% (10-70% range), and 1000 hour fuels 10% (0-40% range). Exposed mineral soil would occur on no more that 15% of the stand. Over all tree mortality in the residual stand should not exceed 15%. Manage smoke to minimize impacts to smoke sensitive areas.

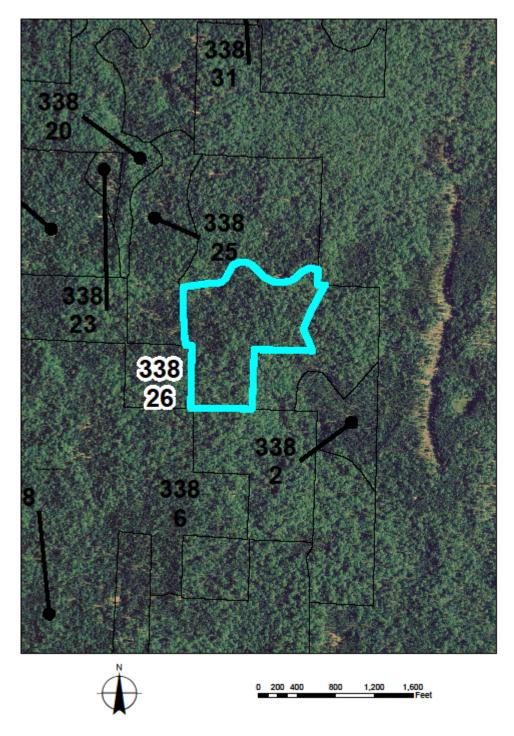
A series of maintenance burns may be required to reduce additional fuel buildup; encourage continued growth and sustain plant species dependent on fire; and, discourage regeneration of tree species associated with extreme fire behavior. It is anticipated that up to two additional burns spaced every 3-5 years may be required to achieve these goals.

Concern: Protection of potential Indiana bats present during the breeding season and potential roosting habitat. **Mitigation:** Prescribed burning would be prohibited from May 1-August 31 to eliminate the possibility of impacting individual bats in summer roosts. Prescribed burns would be conducted only when smoke would be transported away from the Tippy Management Zone (TMZ) or when the majority of the smoke would disperse before reaching the TMZ to protect bats during spring and fall swarming.

Mitigation: Standing snags ≥6 inches dbh would not be cut and/or removed unless considered a safety hazard. **Mitigation:** Cutting would be prohibited from May 1-August 31 to eliminate the possibility of impacting individual bats in summer roosts.

Concern: Protection of bald eagle nesting areas.

Mitigation: Prescribed burning would be conducted only when smoke would be transported away from active nesting areas. See district wildlife biologist for current nest area locations and status.



Alternatives: 4 Treatment: Shelterwood; Site prep

Compartment: 338 District: Cadillac-Manistee

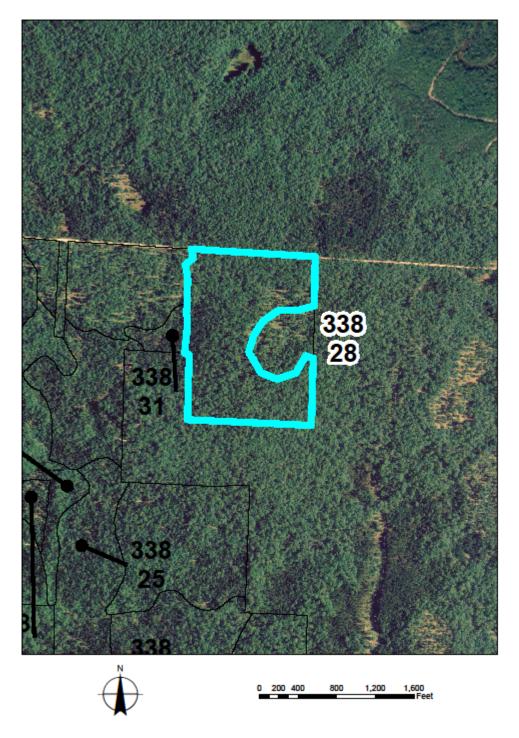
Stand: 26 Location: T20N, R16W, Sec 1; Mason County

Acreage Treated: 32 ELTP: 10

Unit Description: A jack pine-oak stand with a year of origin of 1963 and a basal area (BA) of 90. It is located on

LTA 1 in Management Area 4.2

Resource Prescription: Shelterwood removal cut harvest; remove decadent/high risk jack pine and oak <8" dbh. Site prep for natural regeneration by hand tool felling of all jack pine and oak <5" dbh. Retain a minimum of 30 BA of oak and pine >8" dbh. Retain or create an average of 9 suitable roost trees per acre within the treated area based upon the priorities in the Indiana Bat Management Guidelines (Forest Plan Standards and Guidelines, pages II 23-25). Retain native, mast producing shrubs where possible.



Alternatives: 2, 3, 4 **Treatment:** Shelterwood; Site prep; Plant

Compartment: 338 District: Cadillac-Manistee

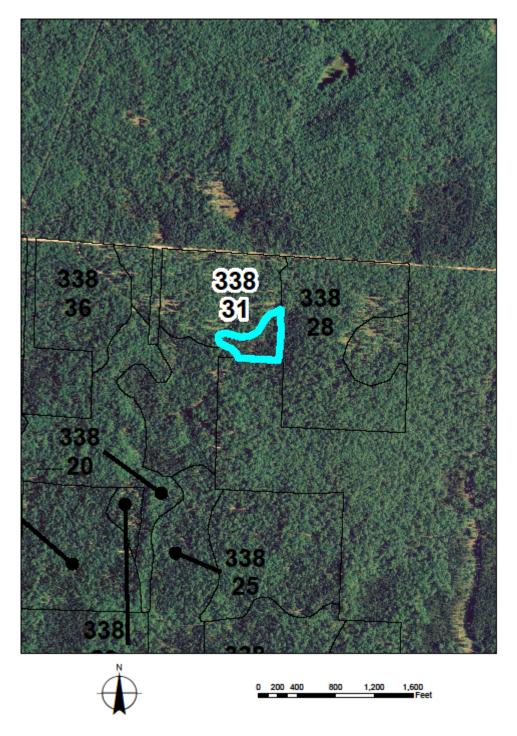
Stand: 28 Location: T20N, R16W, Sec 1; Mason County

Acreage Treated: 44 ELTP: 10

Unit Description: A jack pine-oak stand with a year of origin of 1900 and a basal area (BA) of 70. It is located on

LTA 1 in Management Area 4.2.

Resource Prescription: Shelterwood removal cut harvest; remove decadent/high risk jack pine and oak <8" dbh. Site prep for natural regeneration by hand tool felling of all jack pine and oak <5" dbh. Retain a minimum of 30 BA of oak and pine >8" dbh. Fill-in hand planting to achieve a minimum stocking of 80% within 5 years after harvest. Retain or create an average of 9 suitable roost trees per acre within the treated area based upon the priorities in the Indiana Bat Management Guidelines (Forest Plan Standards and Guidelines, pages II 23-25). Retain native, mast producing shrubs where possible.



Alternatives: 2 Treatment: Clearcut; Site prep
Compartment: 338 District: Cadillac-Manistee

Stand: 31 Location: T20N, R16W, Sec 1; Mason County

Acreage Treated: 4 ELTP: 10

Unit Description: A jack pine stand with a year of origin of 1943 and a basal area (BA) of 140. It is located on

LTA 1 in Management Area 4.2.

Resource Prescription: Retain 10-20 oaks/acre >9" dbh. Site prep for natural regeneration all jack pine and oak <5" dbh. Retain or create an average of 9 suitable roost trees per acre within the treated area based upon the priorities in the Indiana Bat Management Guidelines (Forest Plan Standards and Guidelines, pages II 23-25). Retain native, mast producing shrubs where possible.

